

SELF TESTING-AND-REPAIRING DATA BUFFER AND METHOD FOR OPERATING THE SAME

ABSTRACT

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A self testing-and-repairing data buffer and method for operating the same are disclosed. The data buffer comprises a plurality of flip flops, a multiplexer, a test platform, a repair unit, and a buffer rearrange manager. The test platform generates test signals for checking each flip flop. If any damage is found, the repair unit is used to replace the damage flip flops for storing data. The buffer rearrange manager rearranges the address of the damage flip flops to the repair unit so that the data buffer can be operated normally. By the circuit layout and the precise calculation about time delay, the gated clock signal not used currently is used to form the working frequency of the flip flops of the data buffer so as to reduce the power as the IC is inoperative. Furthermore, the area of the data buffer and number of gates are reduced greatly.

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